Winter Road Operations Snow and Ice Control

- Debrief last season
- Pre-season preparations
- Research / implement new innovations / technologies
 - Pretreatment Salt Brine
 - Backup SOC
- Strategic planning
- Administrative readiness
- Communications
- Physical readiness

Debrief Last Season

- Examine efficiencies
- Examine shortcomings
- Review GIS (missed streets)
- Rate contractors
- Assess communications
- Consider feedback (negative and positive)
- Develop a "Self Rating".....

Preseason Preparations

- Restock salt and sand
- Restore / maintain equipment
- Train new employees (Snow Plow Best Practices)
- Procure contractual resources
 (manpower, equipment, materials and services)
- Investigate new technologies
- Review / initiate efficiencies

Logistics

- DOT clears 5085 lane miles
- 593 La. Mi. Emergency Routes
- 364 La. Mi. Salt Routes
- 4128 La. Mi. Neighborhood Plow Routes
- County Resources
 - 200-225 Personnel
 - 175 pieces of equipment
- Contractor Resources to Supplement County
 - 220-225 contract personnel
 - 200-225 pieces of plowing/sanding equipment
 - If needed 50-75 additional large pieces with operators

Key Initiatives

- Plow route efficiencies
 - Increased equipment resources: Bethesda, Colesville,
 Gaithersburg East, Gaithersburg West and Silver Spring
 Depots
- Coordination Transit Services
- Coordination with MCFRS
- Local weather forecasting
- Resource leveling
- Storm Operations Center (SOC)
 - Enhanced communications internal and external

Key Initiatives

- AccuWeather® and WeatherBug® local forecasting and monitoring
- Real-time streaming traffic conditions
- Real-time pavement conditions
- SOC follows National Incident Management System (NIMS) protocol
- Interface with the Emergency Operations Center (EOC)
- GIS locations of schools, hospitals and fire stations

New Initiatives

- Locations of senior centers and at risk populations
- Fiber-optic Communications
- WeatherBug® Weatherstation (Poolesville)
- Pretreatment with liquid Salt Brine

- What is it?
 - Salt and water mixture
 - Prevention of bond between frozen precipitation and pavement surface
 - Proactive
 - Improves service levels
 - Reduces applications of salt



- How is it used?
 - Apply to the roadway surface before storms
 - Provides enough salt to prevent formation of black ice and frost

- What are the benefits?
 - Less material used
 - Reduces amount of salt applied
 - Increased traffic safety at lower cost

Storm Operations Center Strategic Planning

- Real time "intelligence"
- Resource allocation based on actual "real time" conditions
- Utilization of 195 traffic cameras streaming road conditions
- Increased effectiveness and efficiencies

Total Storm Management

- Pre-storm planning to post storm debriefing
- Use of traditional materials: salt and sand; salt brine
- Traditional decision-making based on intelligence, communications, weather forecast and visual observations

Total Storm Management

- Blends art and science of snow and ice control
- Cost-effective, high level of service
- Mitigates impact of winter operations on highway system
- Mitigates economic impacts on the metropolitan region

Administrative Readiness

- Snow Summit
- Snow Book digital copies available
- Enhanced communications
- Procurement of essential elements
- Contractors
- Salt and sand currently at capacity
- Food
- New initiatives

Communications

- Important element of the program
- National level (NIMS)
- State level (MEMA)
- Local level (EOC)
- Emergency Management Group (EMG)
- Council of Governments (COG)
- MC Homeland Security
- Maryland State Highway Administration (SHA)

Recycling & Refuse Collection

For information about changes to County-provided recycling and trash collection, call 240-777-6410, or visit www.mont-gomerycountymd.gov/solidwaste.

Potholes

Work crews have thousands of miles of pavement to patrol, so they appreciate helpful calls from residents giving the exact location of the pothole, with a specific address or intersection. Crews will repair potholes on County-maintained roads promptly. Just call 240-777-6000 or online at: www.montgomerycountymd.gov, then click on the Department of Transportation, and under Seasonal Information, Pothole Repair.

Phone Numbers & Websites

Montgomery County's Website:

www.montgomerycountymd.gov/snow

RIDE ON240-777-RIDE (7433) www.rideonbus.com

Route changes are updated regularly and announced on the Transit Information phone line and on County Cable Channel 6. Or check Ride On's web site for detour information.

COMMUTER SERVICES 240-773-BWTW (2989)

You can obtain information on alternative transportation, including carpool, vanpool, transit options, transit passes and tokens.

For general information about Metro schedules and routes, and their status during storms, call between 6:00 a.m. and 10:30 p.m. on weekdays, and from 8:00 A.M. to 10:30 P.M. on weekends, or visit their web site.

MONTGOMERY COUNTY

PUBLIC SCHOOLS......301-279-3673

You may check to see if schools are closed or school schedules are changed because of bad weather. However, the news is relayed over local radio and television stations immediately after the decision is made. You may also visit the County web site at www.montgomerycountymd.gov and click on "Winter Storm Information & Updates".

COMMUNITY USE OF

PUBLIC FACILITIES240-777-2706

www.montgomerycountymd.gov/cupf

Community activities scheduled in schools or other County facilities are automatically canceled when public schools close early or for the entire day because of snow. Weekend or holiday cancellations are announced on local television and radio stations as soon as the decision is made. You can also get information on snow closings by calling, or by checking their website.

PUBLIC LIBRARIES 240-777-6500

If you wonder if the library is open, call. After the message announcing openings/closings in Montgomery County; press 1 for changes in scheduled programs and activities and then press 1 again for an up-to-date status, including closing times of branches, conditions of parking lots and how library fines will be handled

MONTGOMERY COLLEGE

www.montgomerycollege.org

If classes are suspended because of snow, you will hear announcements on local radio and television stations. Please don't call the College to ask about school closings. If you don't hear anything on the radio or TV, assume the College is open.

Phone Directory

Public Information

County Cable Montgomery, Channel 6, continuously updates roadway conditions within the County.

For information about snow removal operations during a snowstorm, call the Division of Highway Services at 240-777-6000, or check the county's website at www.montgomerycountymd.gov/snow.



When It Snows

When it snows, snow fighters concentrate on keeping the major County roads and primary neighborhood streets passable. These roads are cleared down to bare pavement as soon as possible after the storm is over.

Plowing generally begins when snow becomes 3 or more inches deep and the temperature indicates that there will be no melting. Even after plowing, snow that has been hard packed by traffic often remains on the street, where the County plows are unable to remove it completely. In this situation, a mixture of sand and salt is spread to provide adequate traction.

After the snow stops falling and after the major County roads and primary neighborhood streets are cleared, crews concentrate on clearing snow from all neighborhood streets and sanding as promptly as possible.

What You Can Expect When It Snows

- It takes about 16 hours following the end of a 3" snowfall to plow and/or treat every County road once.
- After a 10" snowfall, you can expect major and primary County roads to be cleared within 24 to 36 hours. At that time, one pass should have been made through neighborhood streets.
- After a 15" snowfall, our crews will complete this work in about 36 to 48 hours.
- After a 24" snowfall, our crews will complete the work in about 48 to 60 hours.
- However, the type of snow (wet or powdery) and the temperature and wind conditions following the storm can alter this schedule.

Please be patient! Streets are plowed according to their priority and reviewed at the end of each season. Snow fighters work around the clock until **all 4,726 miles of County-maintained streets** are passable. We will use a force of 200 employees, 180 contract personnel with 175 pieces of snow removal equipment, and we have available 35,500 tons of salt and sand to get the job done depending upon the severity of the storm.

County's Action Plan



- 1. Patrol at the start of the storm
- 2. Spot salt bridges and elevated roadways
- Full-scale salt of all major County roads (arterial roads connecting subdivisions or business districts) and primary neighborhood streets (main collector streets through subdivisions)
- 4. Plow all major County roads
- Plow all primary neighborhood streets and all other residential streets
- 6. Spot sand hills and intersections on residential streets

This plan's goal is to ensure that major and primary neighborhood routes are cleared to bare pavement as soon as possible. Secondary neighborhood streets cannot receive the same level of treatment, but will always be plowed and also spot sanded where necessary. Residents will be within 3 or 4 blocks of a fully treated roadway during the course of a storm, and will have complete vehicular access as soon as possible when the storm is over.

Snow Emergency Routes

Both the State of Maryland and Montgomery County have designated certain roads as SNOW EMERGENCY ROUTES, prominently marked with red and white signs. When the State and/or the County initiates the snow emergency plan, it is illegal to drive without snow tires, mud/snow radials or chains, or to park on these roads. Vehicles without snow tires or chains found blocking snow routes during an emergency may be ticketed and towed at the owner's expense. State and County snow emergency plans may not be put into effect simultaneously, so pay special attention to news broadcasts when announcements are made. Statemaintained highways can be identified because they have posted route numbers.

Do's & Don'ts

- If you have a driveway, use it.
- If you do not have a driveway, park as close to the curb as you can. Park your car on the EVEN NUMBERED side of the street if possible. Move to the other side of the street after the plow has cleared it.
- To help avoid the frustration that occurs when a snowplow covers your driveway with snow after you have shoveled, stand facing the street and shovel snow to the right into the yard instead of into the street.

- Leave your car at home! Ride the subway or catch a bus.
 Every car left at home reduces the number of stranded vehicles that slow down snow control operations.
- If you must drive, equip your vehicle with snow tires or chains. Why risk getting stuck, damaging your car, blocking traffic and snow removal equipment or incurring towing and impoundment costs and inconvenience?
- A road that has been sanded is safer than one not sanded.
 Please do not pull out in front of trucks to get up a hill faster!
- Cul-de-sacs: One misplaced vehicle in a cul-de-sac may prevent it from being plowed.

Plowing & How You Can Help

Clearing driveways and entrances is the responsibility of the property owner. Commercial and multi-family property owners are responsible for clearing sidewalks at their properties.

Clearing Sidewalks

County law requires all residential and commercial property owners to clear their public sidewalks within 24 hours of the end of a snowstorm. All residents are strongly encouraged to be good neighbors by clearing the sidewalks in front of their homes, as well as assisting those who may not be physically able to do so.

Who Else Clears Snow?

All numbered (State-maintained) roads in the county are cleared by the Maryland State Highway Administration.

Other departments, outside agencies and governmental jurisdictions have responsibility for plowing. They include: DOT'S Transit Services Division (which will clear as many of its **5,000 highest ridership** shelters and bus stops as it can), the Montgomery County Board of Education, the Maryland-National Capital Park & Planning Commission, Metro, municipalities and homeowner's associations. Commercial parking lot owners plow their property and may not move snow into the street.

Emergencies

Call the Police and Fire Departments at 911 only in lifethreatening emergencies or for emergency Fire and Rescue services. The Police and Fire Departments will contact the Division of Highway Services if an emergency vehicle needs assistance to maneuver on a snow or ice-covered street.

Physical Readiness

- Equipment serviced and ready to go
- Materials stockpiled
- Fleet Management on board
- Equipment inspections and calibrations of salt spreaders
- Route test runs
- Mock Snow Storm conducted on November 3rd, 2009

Coordinate Contractors' Work

- Coordination at the Depot level
- Contractors provided with updated plow maps and Inspection contacts
- Equipment inspections conducted at Depots on October 25th and November 1st
- Equipment pay rates determined

Storm Notifications

- Highway Services notified by Alert Montgomery, AccuWeather ®, National Weather Service, WeatherBug®, and other sources such as national news
- Notifications vary 5 days out to less than 48 hours
- Response strategy and mobilization decisions based on forecasts and real time information

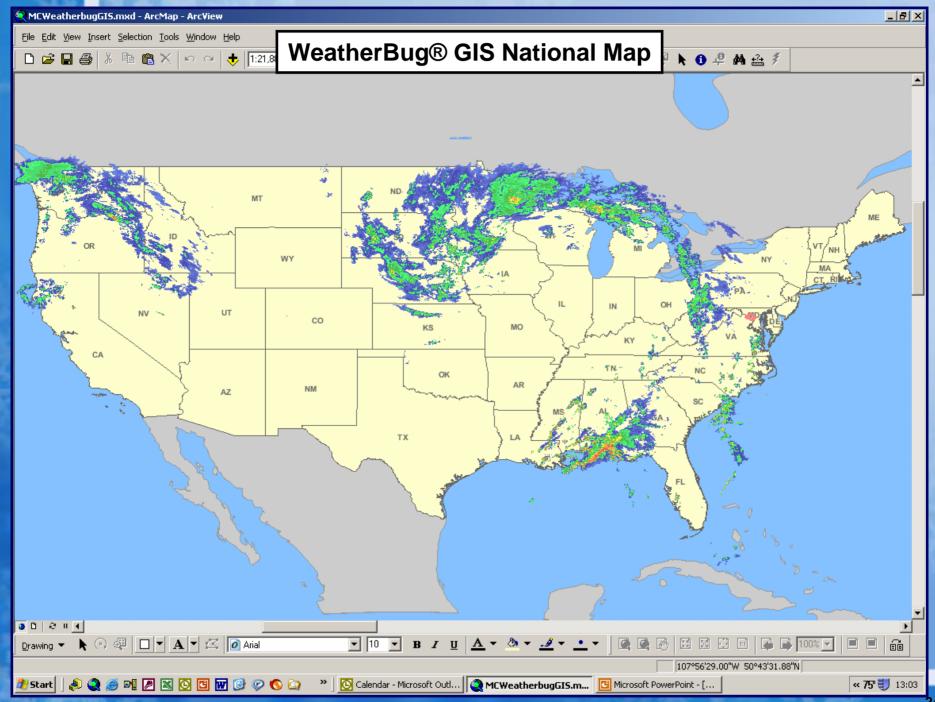
Storm Notifications

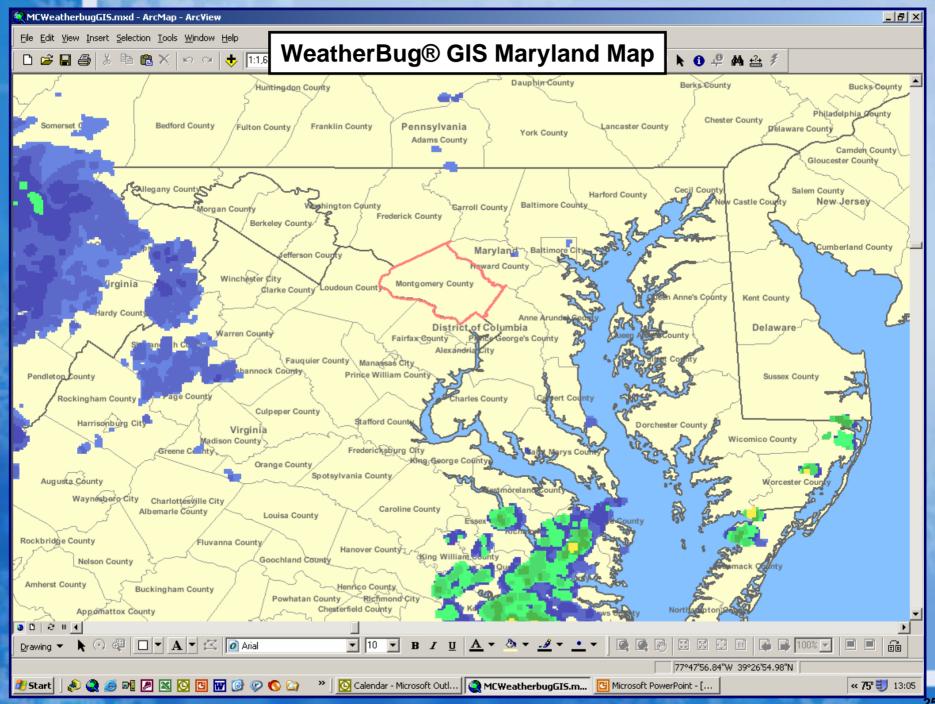
- Storm Notifications
- National notification from AccuWeather® (2,000 mile view; 3-5 days out)
- AccuWeather® Special Statement (1,000 mile view; 2-3-days out)
- AccuWeather® Alert (500 mile view; 36-48 hours out)
- AccuWeather® Warning (100 mile view; < 36 hours out)
- WeatherBug® (local "realtime" weather conditions)

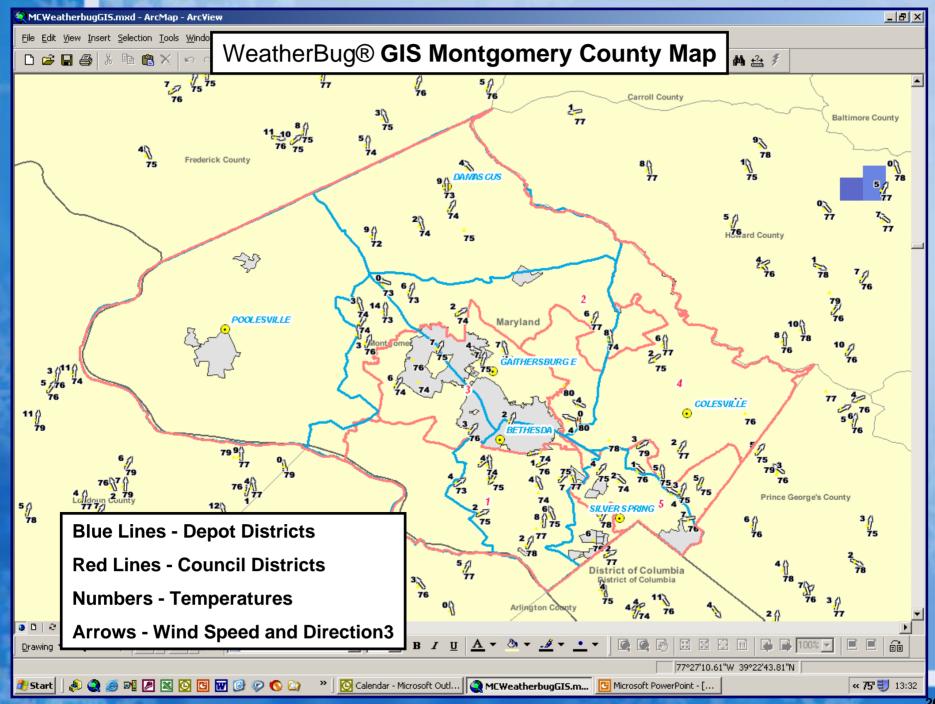


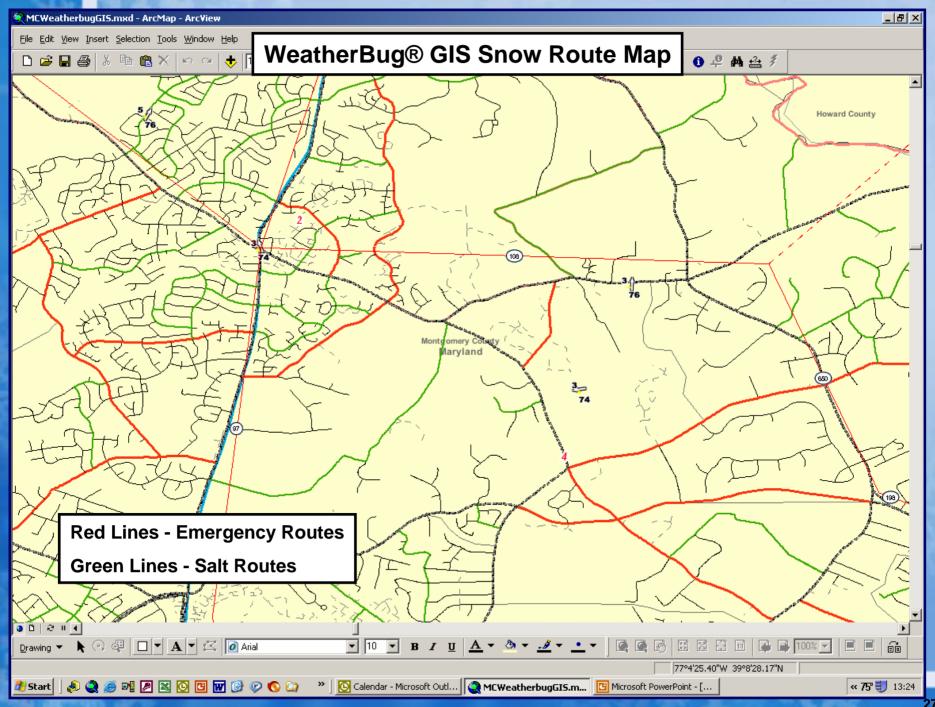
Local Forecasting

- Zoom with WeatherBug®
- Over 300 WeatherBug® stations in Metro Region
- SOC issues daily internal weather forecast at 2:00 pm

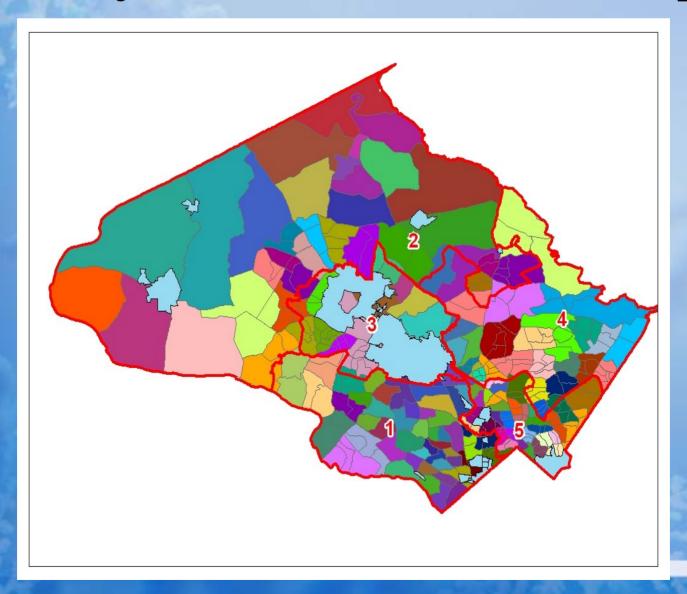


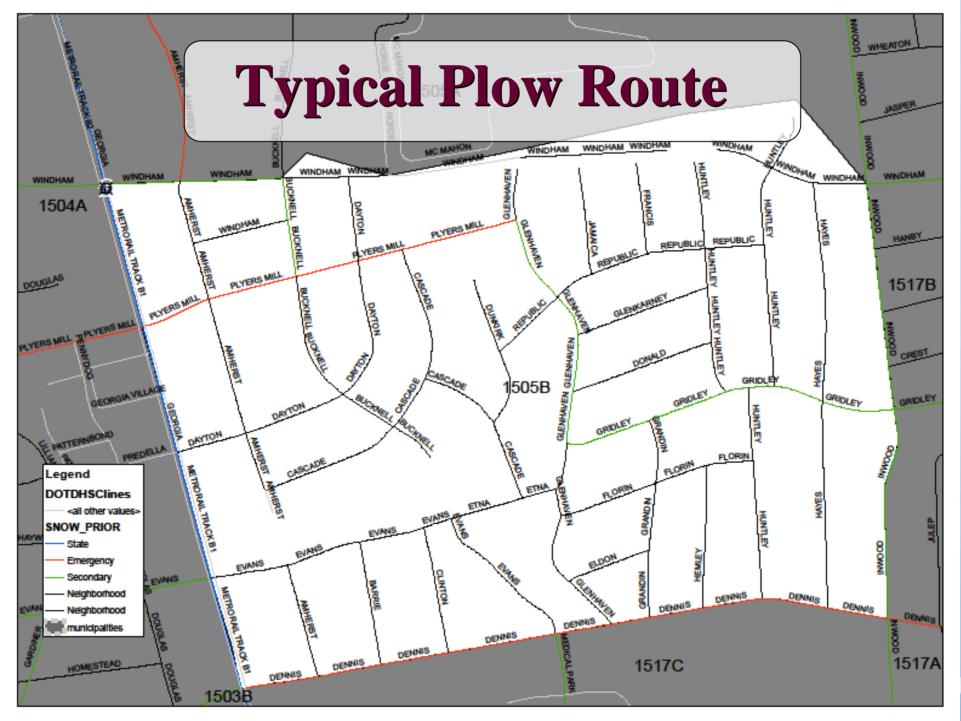


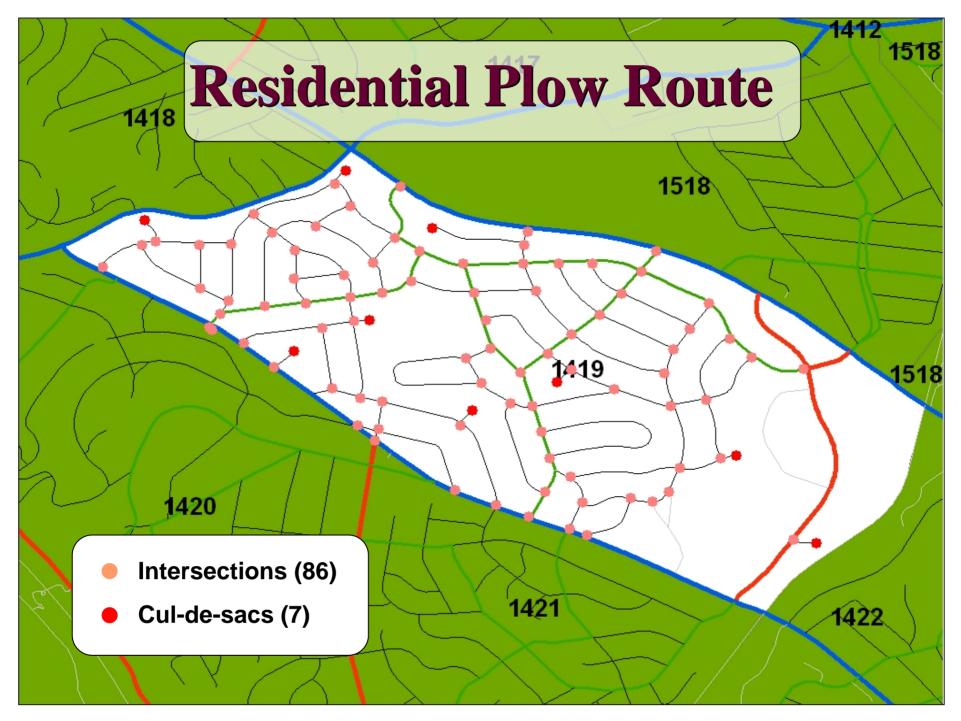




Countywide Snow Route Maps







Storm Operations Response and Mobilization

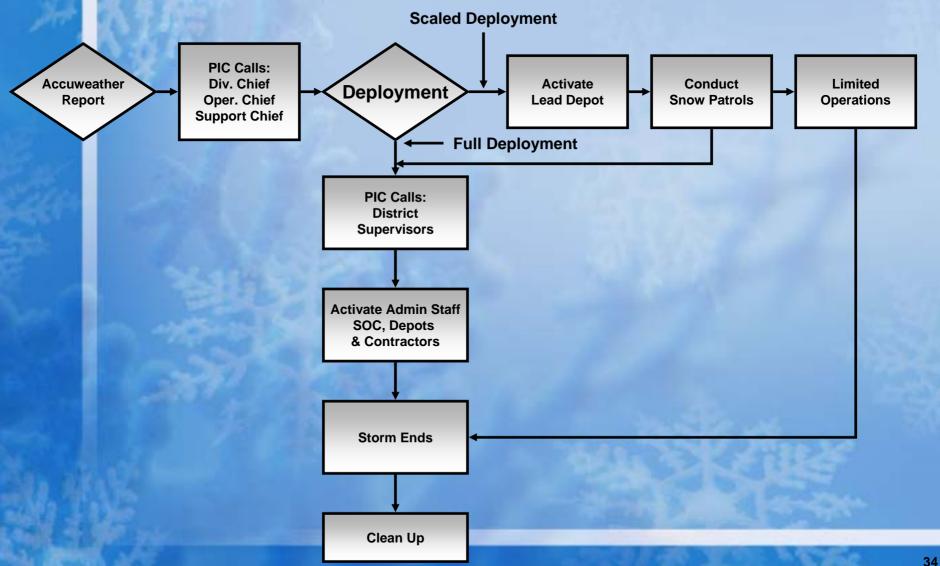
- Mobilization of County and Contract crews
- Plan I Salting and abrasives on Emergency and Secondary salt routes
- Plan II Tandem plowing approach to address Emergency salt routes
- Plowing Secondary salt routes
- Neighborhood Plowing



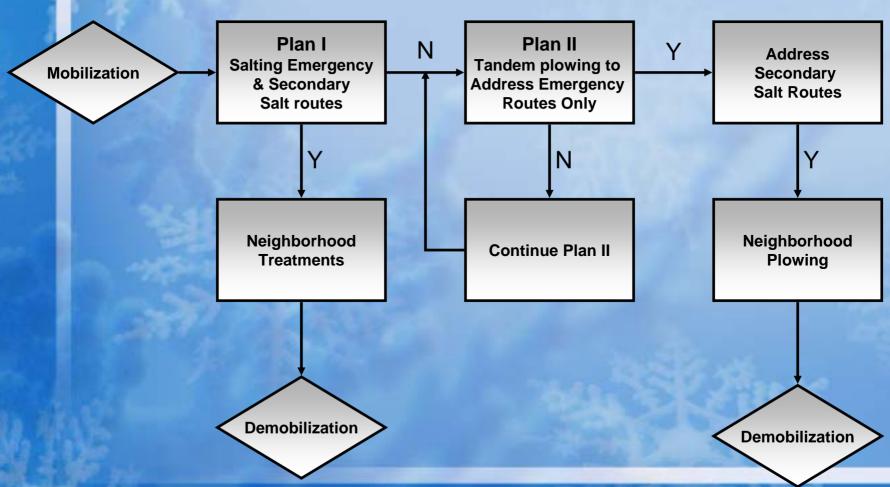
Various Scenarios

- Work Day Snow
- Multiple Snow Events (back-to-back storms)
- Emergency Callback
- Weekend Snow
 - Friday Night Snow 12-18-09
- Black Ice
- Ice Storm

After Hours PIC Activation Flowchart



Normal Activation Storm Operations Flow Chart

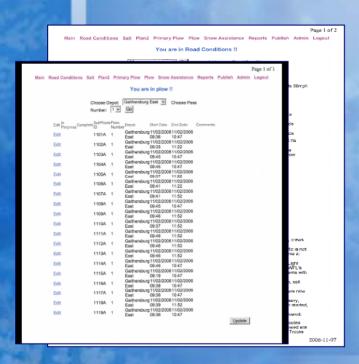






Snow Application

- Communication between Depots and SOC
- Track Progress
- Resource Leveling
- Map for Public Viewing

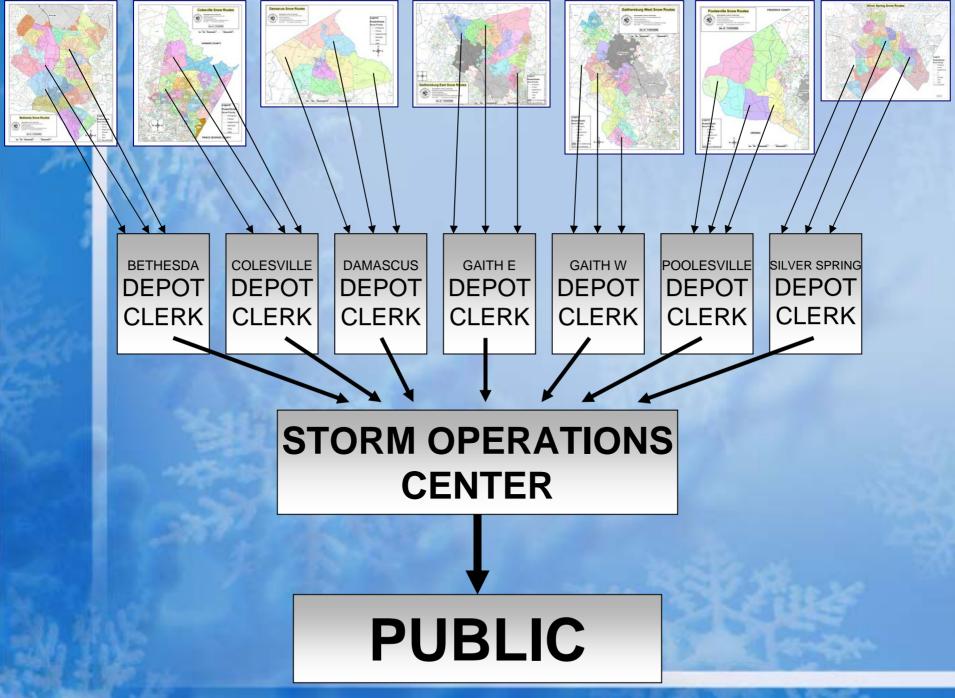


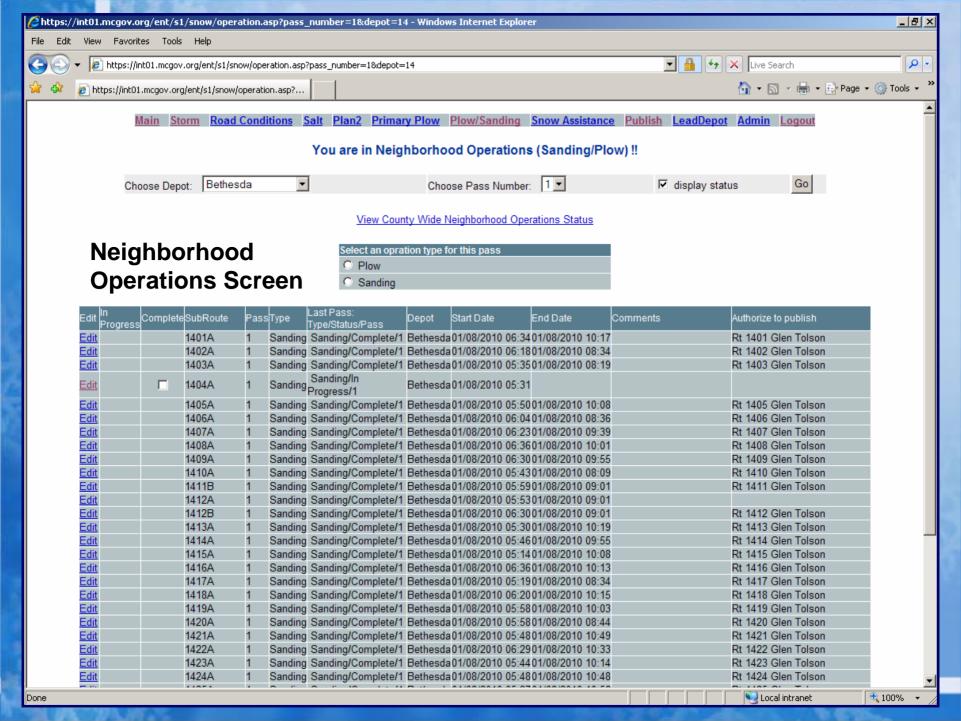


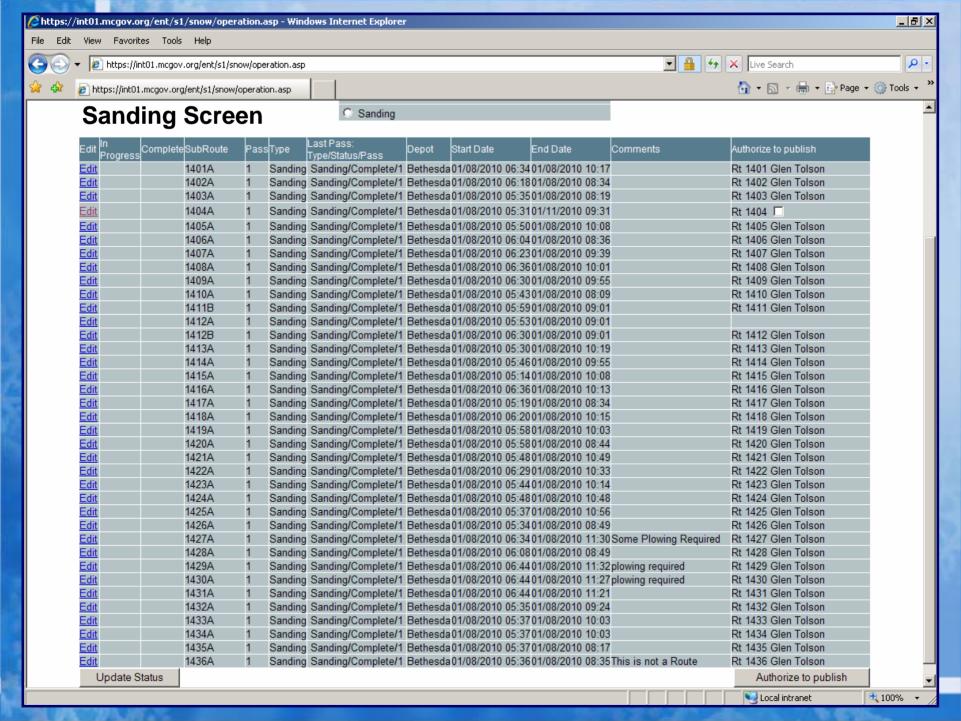
The Snow Operations
Center Provides
Messages Based On
Depot Input



Residents can enter addresses to get plowing information.

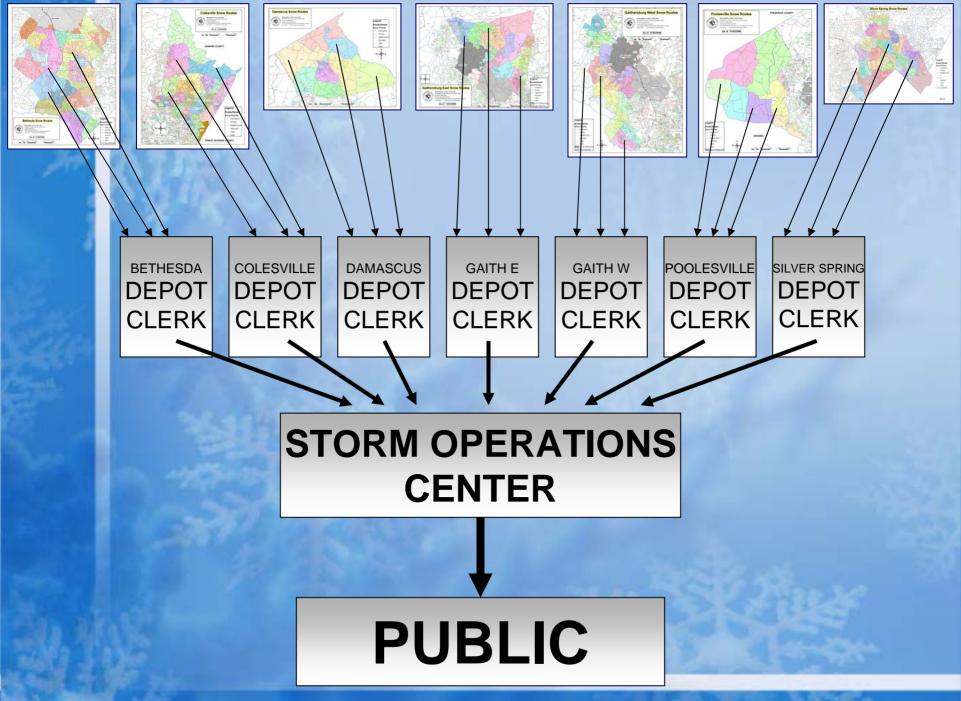












Storm Operations Center

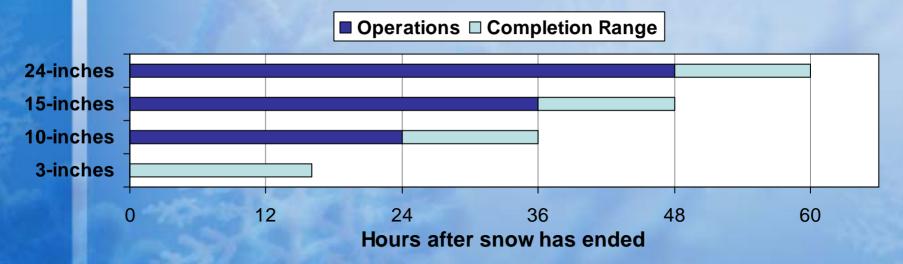
- Evaluate progress and field conditions through Snow Application
- Observe real-time weather and pavement conditions
- Division Chief and Managers confer on operations
- Storm Operations Manager coordinates information with other entities
- Directives issued to the field
- Interfaces with: public, web site, multi-media interviews, Customer Service Center, Snow
 Application map





Treatment and Plow Time Frame

 After storm has ended, crews continue operations with completion expectations as shown bellow:



• The type of snow (wet or powdery), the ambient temperatures and road temperatures, as well as wind conditions, will alter the timeline.

Tiered Demobilization

- Careful assessment of countywide road conditions and weather forecast
- Reduce support as appropriate
- Scale back depot resources
- Activate Lead Depot

Assessments

- Condition of equipment and facilities
- Status of county personnel
- Status of contract resources
- Material inventory
- Weather forecasts
- Readiness for next event

Debriefing

- County Executive
- Chief Administrative Officer
- Assistant Chief Administrative Officer
- Department Director
- Department Deputy Director
- DOT Division Chiefs
- Public Information Officer



Debriefing

- Management
- District Supervisors
- Inspection staff and contractors
- Call Center
- Review customer feedback
- Self assessment



Post Storm Activities

- QA/QC storm cleanup
- Inspect storm drainage
- Storm drain clean out
- Replace mailbox knock downs (if any)
- Activate pot hole trucks
- Check intersections
- Prepare for next storm